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| 09/873,309 | 06/05/2001 | Erik Dahlman | 040001-050 | 5727 |

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| **ART UNIT** | **PAPER NUMBER** |
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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/873,309
Filing Date: June 05, 2001
Appellant(s): DAHLMAN ET AL.

Erik Dahlman et al.
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 26, 2006 appealing from the Office action mailed August 15, 2005

**(1) Real Party in Interest**

Telefonaktiebolaget LM Ericsson (publ), SE-164 83, Stockholm, Sweden

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| US 2002/0009061 | Willenegger, Serge | 01-2002 |
| US 6,385,462 | Baum, Kevin Lynn | 05-2002 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 13 and 15 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willenegger (US 2002/0009061) in view of Baum et al. (6,385,462).

Regarding Claim 1, Willenegger teaches a method of transmitting information in a radio communication system comprising at least one transmitter and at least one receiver, the method comprising the steps of: transmitting first information in a first channel from the at least one transmitter to the at least one receiver (Sections 0034 - 0037), and transmitting second information in a second channel from the at least one transmitter to the at least one receiver and setting the power used for transmitting in the

second channel to give a secure communication of the second information (Sections 0034 – 0037, 0046, 0047 lines 3 – 9).

Willenegger does not teach using in the transmitting a modulation and/or coding scheme and adapting the modulation and/or coding scheme to give a secure communication of the first information and wherein in the step of transmitting the first information, the choice of the modulation and/or coding scheme is controlled by the level of the power at each instant set for transmitting in the second channel.

Baum teaches using in the transmitting a modulation and/or coding scheme and adapting the modulation and/or coding scheme to give a secure communication of first information (Column 3 lines 34 – 56, Column 4 lines 22 – 25) and wherein in the step of transmitting the first information, the choice of the modulation and/or coding scheme is controlled by the level of the power at each instant set for transmitting in a channel (Column 4 lines 19 – 25, the planned links comprise channels).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the MCR method taught by Baum on the PDSCH of Willenegger for the purpose of providing an adaptive power allocation, which achieves high system capacity and system coverage as taught by Baum.

Regarding Claim 2, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Willenegger further teaches wherein the second channel is transmitted from the same transmitter as the first channel (Section 0047 lines 3 – 5).

Regarding Claim 3, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Willenegger further teaches wherein the second channel

is transmitted from one of a plurality of transmitter, comprising the transmitter that transmits the first channel (Section 0047 lines 3 – 5).

Regarding Claim 4, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Willenegger further teaches wherein the first physical channel that is shared between several users with each user having a unique second channel and the user of the second channel being currently served by the first channel (Sections 0034 – 0036). Baum further teaches wherein the modulation and coding scheme used by a channel is determined by the instantaneous transmitted power of the channel (Column 4 lines 19 – 25).

Regarding Claim 5, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Willenegger further teaches wherein the transmitter is a base station and the receiver is a mobile station (Sections 0035 – 0036, 0047 lines 3 – 5).

Regarding Claim 6, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Willenegger further teaches wherein the first channel is a shared downlink channel and the second channel is a dedicated physical channel (Sections 0035 – 0036).

Regarding Claim 7, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 6. Willenegger further teaches wherein the power used on the downlink shared channel when transmitting to a specific receiver is controlled by the power control commands transmitted by the receiver in the reverse link (Sections 0046,

0047 lines 3 – 9). Baum further teaches a modulation and/or coding scheme (Column 4 lines 19 – 25).

Regarding Claim 8, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 7. Willenegger further teaches wherein the power control commands are transmitted in combination with other information (Section 0037).

Regarding Claim 9, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 6. Willenegger further teaches a dedicated physical channel and a downlink-shared channel (Sections 0035 – 0036). Baum further teaches wherein the power is mapped into a suitable modulation and coding scheme (Column 4 lines 19 – 25).

Regarding Claim 10, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 9. Baum further teaches wherein a varying modulation and coding scheme is used on a channel (Column 4 lines 19 – 25).

Regarding Claim 11, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 9. Baum further teaches wherein the mapping is static (Column 4 lines 19 – 25, there will be times when the signal quality will stay the same which means that the power level will not change and thus the MCR will not change, the mapping will therefore be static).

Regarding Claim 12, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 9. Baum further teaches wherein the mapping is dynamic (Column 4 lines 19 – 25, there will be times when the signal quality will change the

which means that the power level will change and thus the MCR will change, the mapping will therefore be dynamic).

Regarding Claim 13, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 11. Baum further teaches wherein a predefined table is used for mapping the power level to the modulation and coding scheme (Column 4 lines 22 - 25, a plurality of MCRs will be selected depending on the power level thus there will be a table for mapping the power level to the modulation and coding scheme).

Regarding Claim 15, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 12. Willenegger further teaches wherein at least two base stations are transmitting at the same time to the same mobile station, wherein the power of the DPCH is multiplied with a constant k, k >= 1 (Section 0049 lines 1 – 6, if the transmit power from all of the base stations is the same the total power of the DPCH will be equal to said transmit power multiplied by a constant, said constant being the number of base stations in the active set), both channels DPCH and DSCH transmitting from the same base station (Section 0047 lines 3 – 5). Baum further teaches a constant being used for determining the modulation and coding scheme of a channel (Column 3 lines 37 – 45).

Regarding Claim 16, Willenegger teaches a method of modifying the transmission parameters in a radio communication system comprising at least one transmitter, at least one receiver (Sections 0034 - 0037), a first channel for transmitting first information from the at least one transmitter to the at least one receiver (Sections 0034 - 0037), and a second channel for transmitting second information from the at

least one transmitter to the at least one receiver (Sections 0034 - 0037), the method comprising the steps of setting the power used for transmitting in the second channel (0046, 0047 lines 3 – 9).

Willenegger does not teach adapting a modulation and/or coding scheme used in transmitting in the first channel, wherein in the step of adapting, the choice of the modulation and/or coding scheme is controlled by the level of the power at each instant set for transmitting in the second channel.

Baum teaches adapting a modulation and/or coding scheme used in transmitting in a channel (Column 3 lines 34 – 56, Column 4 lines 22 – 25), wherein in the step of adapting, the choice of the modulation and/or coding scheme is controlled by the level of the power at each instant set for transmitting in the channel (Column 4 lines 19 – 25, the planned links comprise channels).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the MCR method taught by Baum on the PDSCH of Willenegger for the purpose of providing an adaptive power allocation, which achieves high system capacity and system coverage as taught by Baum.

Regarding Claim 17, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 16. Willenegger further teaches wherein at least two transmitters are transmitting at the same time (Section 0049 lines 1 – 6), wherein the power of the second channel is multiplied with a constant k (Section 0049 lines 1 – 6, if the transmit power from all of the base stations is the same the total power of the DPCH

will be equal to said transmit power multiplied by a constant, said constant being the number of base stations in the active set).

Regarding Claim 18, Willenegger teaches a radio communication system comprising at least one transmitter, at least one receiver (Sections 0034 - 0037), a first channel for transmitting first information from the at least one transmitter to the at least one receiver (Sections 0034 - 0037), and a second channel for transmitting second information from the at least one transmitter to the at least one receiver (Sections 0034 - 0037), the system comprising means for setting the power used for transmitting in the second channel (0046, 0047 lines 3 – 9).

Willenegger does not teach means for adapting a modulation and/or coding scheme used in transmitting in the first channel, comprising means for controlling the choice of the modulation and/or coding scheme by means of the level of the power at each instant set for transmitting in the second channel.

Baum teaches means for adapting a modulation and/or coding scheme used in transmitting in a channel (Column 3 lines 34 – 56, Column 4 lines 22 – 25), comprising means for controlling the choice of the modulation and/or coding scheme by means of the level of the power at each instant set for transmitting in the channel (Column 4 lines 19 – 25, the planned links comprise channels).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the MCR method taught by Baum on the PDSCH of Willenegger for the purpose of providing an adaptive power allocation, which achieves high system capacity and system coverage as taught by Baum.

Regarding Claim 19, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 1. Baum further teaches a computer program product directly loadable into the internal memory of a digital computer comprising software portions when said product is run on a computer (Figure 1, a typical base station such as 102 comprises processors that have memory for the storage of software that enables said base station to conduct it's functions).

Regarding Claim 20, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 16. Baum further teaches a computer program product directly loadable into the internal memory of a digital computer comprising software portions when said product is run on a computer (Figure 1, a typical base station such as 102 comprises processors that have memory for the storage of software that enables said base station to conduct it's functions).

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willenegger (US 2002/0009061) in view of Baum et al. (US 6,385,462 B1), as applied to Claim 12 above, and further in view of Balachandran et al. (US 6,567,375 B2).

Regarding Claim 14, Willenegger in view of Baum teaches all of the claimed limitations recited in Claim 12. Willenegger in view of Baum does not teach wherein the mapping is changed as a function of some retransmission requests for data blocks being retransmitted over the shared channel.

Balachandran teaches wherein the mapping is changed as a function of some retransmission requests for data blocks being retransmitted over the shared channel

(Column 3 lines 48 – 67, Column 6 lines 1 – 13, the MCS changes to compensate for the delay caused by the ARQs).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ARQ-MCS method taught above in Balachandran in the wireless system of Willenegger in view of Baum for the purpose of creating a dynamic wireless system that adapts it's communication links to compensate for lost or corrupted data packets.

**(10) Response to Argument**

**4. Response to Notice Regarding Prior Appeal and Request for Refund of Appeal Fee**

An Examiner's Answer, which is a reply to an appeal, was not issued in response to the First Appeal filed March 17, 2005 because Appellants' arguments were reconsidered and found to have a degree of merit thus a Non-Final Office Action dated April 19, 2005 was issued. As asserted in the Office Action dated August 15, 2005, the Appellants' arguments were reviewed and reconsidered. Examiner did not initially accept the Appellants' arguments as persuasive, however, Examiner, reconsidered Appellants' arguments and determined the arguments as convincing and thus withdrew the final rejection. Examiner then conducted a further search, which rendered the reference Willenegger (US 2002/0009061).

**5. Response to Accusation of Misrepresentation made by the Examiner in the Final Office Action dated August 15, 2005.**

Examiner stands corrected on the issue of who asserted that the Baum reference teaches "that the transmit power of a channel is used to control the choice modulation and/or coding scheme on said same channel". Appellants' are correct; Examiner made said assertion, not the Appellants.

6. Appellants' arguments filed May 26, 2006 have been fully considered but they are not persuasive.

Examiner respectfully submits that the Appellants have set forth arguments solely against the secondary reference Baum as opposed to the combination of the primary reference Willenegger and Baum.

Willenegger teaches a Wideband CDMA (WCDMA) system in which there is a first and a second channel. The first channel is the Physical Downlink Shared Channel (PDSCH) and the second channel is the Downlink Dedicated Physical Channel (DPCH) (See Willenegger, Sections 0034 – 0036). The transmit power of the DPCH is used to control the power level of the PDSCH (See Willenegger, Sections 0046, 0047 lines 3 – 9) thus the choice of power level on the first channel (PDSCH) is controlled by the level of the power at each instant set for transmitting in the second channel (DPCH).

Baum, as set forth in above, teaches using in the transmitting a modulation and/or coding scheme and adapting the modulation and/or coding scheme to give a secure communication of first information (See Column 3 lines 34 – 56, Column 4 lines

22 – 25) and wherein in the step of transmitting the first information, the choice of the modulation and/or coding scheme is controlled by the level of the power at each instant set for transmitting in a channel (See Column 4 lines 19 – 25, the planned links comprise channels). Examiner agrees with Appellants' assertion Baum does not teach using transmit power of a second channel to control the choice of modulation and/or coding scheme on the first channel, however, Baum does teach using transmit power of a channel to control the choice of modulation and/or coding scheme on said channel. Baum teaches a CDMA/WCDMA system (See Cols. 3 lines 65 – 67, Cols. 10 lines 22 – 27). It is well established in the art that CDMA systems, or any land mobile radio system for that matter, comprise a plurality of channels thus one can say with certainty that the links cited in the Baum reference comprise channels. Since said links comprise channels one can further say that the modulation-coding scheme will be assigned to at least one channel. Baum teaches a system that achieves high system capacity and high system coverage (See Baum Col. 1 lines 16 – 38). The cited passage in Baum (Col.1 lines 16 – 38) shows that in order for there to be high system capacity, which is controlled by the modulation coding scheme, and high system coverage, which is controlled by the transmit power, there must be a correspondence between the modulation coding scheme and the transmit power. Baum therefore teaches a selection of a modulation and/or coding scheme for a channel that is controlled by the level of power of at each instant set for transmitting in said channel.

Willenegger, as set forth above, teaches a first and second channel in which in which the choice of power level on the first channel is controlled by the level of power at

each instant set for transmitting in the second channel. Willenegger is concerned with maintaining adequate power in the PDSCH, which is used for high rate packet data transmissions, and the DPCH such that a particular target signal-to-noise ratio (SNR), which is a signal quality metric, is achieved. Baum is concerned with controlling the modulation coding rate and transmit power on channels such that a target signal quality is achieved thereby achieving high system and capacity and high system coverage thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the PDSCH of Willenegger with the MCR method of Baum for the purpose of providing an adaptive power allocation, which achieves high system capacity and system coverage as taught by Baum. The combination of Willenegger and Baum render a first channel (PDSCH) with an adaptive modulation and/or coding scheme that is dependent on the power level of the PDSCH. The power level of the PDSCH is dependent on the power level of the DPCH thus the modulation and/or coding scheme of the PDSCH will ultimately depend on the power level of the DPCH. The combination of Willenegger and Baum thus render the claimed invention

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Raymond S. Dean

July 24, 2006

Conferees:

Edward Urban (Supervisory Patent Examiner)

Matthew Anderson (Supervisory Patent Examiner)

Raymond S. Dean (Patent Examiner)

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**Matthew D. Anderson**
Supervisory Patent Examiner

Day : Thursday
Date: 14-Sep-2006
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# SIRDEV MIS INTRANET

## APPEAL CENTER RETURN

Application Number: 09873309 Date: 14-Sep-2006
Examiner: RAYMOND, DEAN GAU: 2618

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Raymond S. Dean 9/19/06